

## **REMARKS**

The Amendment filed August 24, 2009 was not entered and this response replaces that Amendment. Claims 1-3, 5, 7 and 11-13 are amended and new claims 28-30 are added. No new matter is being presented.

### **35 U.S.C. § 102 Rejection of Claims 15-18 and 22**

Claims 15-18 and 22 are rejected under 35 U.S.C. § 102(b) as being anticipated by EP 1170387 to Soyama (hereinafter “Soyama”). The Office Action indicates that Soyama discloses an apparatus with a vessel (3), nozzle (4), pressure/flow control valve (6) upstream of the nozzle and a steel sample plate (W). The steel sample plate (W) of Soyama is equated to Applicants’ claimed baffle plate.

With respect to Soyama, element “W” referenced in the Office Action is actually a “Workpiece.” According to Soyama, “[h]igh-pressure water is injected from Nozzle 4 to generate Cavitation 9 around the jet so to hit the cavitation bubbles **against Workpiece W.**” (Soyama, ¶ [0050], emphasis added). Impact from the cavitation is used to **treat** the Workpiece W. The Workpiece W is to be treated by the surface modification method described in Soyama and does not constitute part of its device to perform the method. Thus, Soyama fails to disclose or suggest pulp processing equipment that comprises a baffle plate to regulate the flow from the nozzle to a vessel outlet as claimed.

As Soyama fails to disclose or suggest each element as claimed by Applicants in independent claim 15, Applicants respectfully request withdrawal of the rejection of independent claim 15. Regarding claims 16-18 and 22, Applicants assert that Soyama fails to disclose or suggest each element as claimed by Applicant in independent claim 15, from which claims 16-18 and 22 depend. Accordingly, Applicants respectfully request withdrawal of the rejection of dependent claims 16-18 and 22 for the same reasons.

**35 U.S.C. § 103 Rejection of Claims 1-4, 6-7, 11-14 and 24-27**

Claims 1-4, 6-7, 11-14 and 24-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,834,982 to Solonitsyn et al. (hereinafter “Solonitsyn”), in view of Soviet patent document SU 720085 to Pilipenko et al. (hereinafter “Pilipenko”), as evidenced by Smook.

The Office Action indicates that Solonitsyn discloses “a method for treating pulp using cavitation which delaminates and fiberates fibers using a fluid jet.” (Action, p. 8). Additionally, Solonitsyn is cited for disclosing bubbles generated by cavitation that contact the pulp suspension to strip contaminants.

The claims are presently narrowed to recite bubbles being formed by a liquid jet, where a pressure of the jetting liquid is 2 MPa or more. Nowhere is this disclosed by the cited references. In the Office Action, reference is made to Solonitsyn as disclosing a pressure developed of 30-40 meters (0.29 MPa – 0.39 MPa based on conversion as follows: meters water column \* (3.28ft/meter) \* (1psig/2.31ft) \* (0.006894MPa/psig)). Admittedly, Solonitsyn fails to disclose or suggest upstream (or downstream) pressure. Additionally, the treatment methods disclosed in Solonitsyn are not applicable to high pressure systems “since cavitation forces arising in such hydrodynamic flow **are of low intensity**” (Col. 6, lines 32-34, emphasis added) and “**flow by the jet nozzle is weak** and suffices only for intermixing any given components in the liquid” (Col. 6, lines 49-52, emphasis added).

In rejecting claims 7 and 13, recognizing the deficiencies of Solonitsyn, the Office Action references Pilipenko as disclosing “75-120 m water pressure at the inlet” which, according to the Office Action, is equivalent to 0.73 MPa – 1.174 MPa. Based on Pilipenko, the Action states that “it would have been obvious to apply the pressures given by Soviet ‘085 [Pilipenko] to the ‘982 patent [Solonitsyn]” (Action, p. 9). Applicants respectfully

disagree. As detailed above, Solonitsyn clearly teaches away from high pressure systems. As the Office Action recognizes, the only pressure detailed in Solonitsyn is directed to suspension flow “under a pressure of 30-40 m” (0.29 MPa – 0.39 MPa )(Col. 10, lines 37-41). The pressure disclosed in Pilipenko is double the pressure allowed in the system and method of Solonitsyn. One skilled in the art, based on the disclosure of Solonitsyn teaching away from use of high pressure, would not utilize the higher pressures disclosed in Pilipenko in the methods of Solonitsyn.

Moreover, Pilipenko fails to disclose or suggest a jetting liquid pressure of 2 MPa or more, as now claimed. As recognized in the Office Action, the highest pressure contemplated by Pilipenko is 1.174 MPa. Where a reference does not disclose a feature of a claim relied on to distinguish the prior art, it cannot suggest modifying the prior art to contain that feature, see *In re Civitello*, 144 USPQ 10 (1964) wherein the CCPA stated:

Since Haslachner fails to disclose the feature of the claim relied on, we do not agree with the Patent Office that it would suggest modifying the Craig bag to contain that feature. The Patent Office finds the suggestion, only after making a modification which is not suggested, as we see it, by anything other than appellant's own disclosure. This is hindsight reconstruction. It does not establish obviousness. (Emphasis the Court's).

See also *In re Glass*, 176 USPQ 489 (1973) wherein the CCPA stated that it is error to ignore specific limitations distinguishing over the references. Thus, since the prior art does not disclose the claimed pressure, the rejection based on the prior art should be withdrawn, since it is based on a hindsight reconstruction and does not establish obviousness.

Additionally, the highest pressure contemplated in the low-pressure method of Solonitsyn is 0.39 MPa. Even if a secondary reference disclosed higher pressures, such as 2 MPa or more, it would not be appropriate to simply combine with Solonitsyn, since the higher pressures would not allow the system and method of Solonitsyn to operate in the manner intended.

Thus, independent claims 1 and 11 are believed to be patentably distinct over Solonitsyn, Pilipenko and Smook either alone or in combination. With respect to dependent claims 2-5, 7, 12-14 and 25-29, such claims are ultimately dependent on independent claims 1 and 11, respectively, and are patentably distinct for the same reasons.

### **35 U.S.C. § 103 Rejection of Claim 8**

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Solonitsyn, in view of Pilipenko and further in view of U.S. Patent No. 7,264,182 to Richter et al. (hereinafter “Richter”). However, claim 8 is ultimately dependent on independent claim 1 and is patentably distinct as Solonitsyn, Pilipenko and Richter do not disclose use of a liquid jet where a pressure of the jetting liquid is 2 MPa or more.

### **35 U.S.C. § 103 Rejection of Claims 5 and 15-24**

Claims 5 and 15-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Solonitsyn, in view of Pilipenko and Smook. However, claim 5 is ultimately dependent on independent claim 1 and is patentably distinct as Solonitsyn, Pilipenko and Smook do not disclose use of a liquid jet where a pressure of the jetting liquid is 2 MPa or more.

With respect to claims 15-24, the Office Action states that Solonitsyn discloses an apparatus that includes a recirculation tank, an effuser, a reactor, a pump and nozzles for introducing a chemical reagent to a suspension flow, where the nozzles are formed by 2 plates (referring to Solonitsyn, Fig. 2). These plates are equated to Applicants’ claimed baffle plate. It is noted that the Office Action provides the claim construction of a plate to be “A smooth, flat, relatively thin, rigid body of uniform thickness,” and concludes that a cylindrical object cannot be considered a plate. (Action, pg. 5).

Referring to Fig. 2 of Solonitsyn, the elements detailed in the Office Action to be “plates” are in fact pipes leading to the nozzles 15. The arrows seen in Fig. 2 show the direction of flow of material through those very pipes to the nozzles 15. The pipes are not “flat” as necessary to fit within the claim construction of a “plate” as provided in the Office Action.

Thus, independent claim 15 is believed to be patentably distinct over Solonitsyn, Pilipenko and Smook either alone or in combination. With respect to dependent claims 16-24, such are ultimately dependent on independent claim 15 and are patentably distinct for the same reasons as those claims.

Prompt and favorable examination on the merits is solicited.

Respectfully submitted,

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